United Nations ECE/TRADE/C/CEFACT/2018/11

Economic and Social Council

Distr.: General
13 April 2018

English only

Economic Commission for Europe

UNECE Executive Committee

Centre for Trade Facilitation and Electronic Business
Twenty-fourth session
Geneva, 30 April and 1 May 2018
Item 7b of the provisional agenda
Recommendations and standards: Other deliverables for noting

Procedure for Reference Data Model Artefact Publication

Summary

UN/CEFACT maintains a number of libraries on data related to cross border trade, including Reference Data Models (RDMs) which are logical subsets related to a particular area of activity such as Supply Chain or Transport/Logistics. This document provides a proposed procedure for the generation of RDM artefacts in order to facilitate their reuse and integration into other systems. This procedure makes direct reference to the following documents: UN/CEFACT Reference Data Model Guideline (ECE/TRADE/C/CEFACT/2017/INF.2), UN/CEFACT Supply Chain Reference Data Model Business Requirement Specification (SCRDM-BRS), UN/CEFACT Supply Chain Reference Data Model Requirement Specification Mapping (SCRDM-RSM), UN/CEFACT SCRDM Master Structure and Subset of Core Component Library (Context CCL).

This document is presented to the twenty-fourth Plenary for noting.

GE.18-05906(E)
1805906

Please recycle

Contents

Page

I. Purpose and scope 3
II. Publication requirements 3
A. Functionality 3
B. Publication content 4
C. Publication formats 6
D. Mapping of functionality to the different publication formats 6
III. Publication procedures of RDMs 7
IV. Definition of terms 7
Annex I: Publication format PDF 9
I. Introduction (title page) template proposed 9
II. Master structure and context CCL BIE template proposed 10
Annex II: Publication Excel format proposed 11
I. Introduction template sheet 11
II. Master Structure template sheet 11
III. Context CCL BIE template sheet 11
Annex III: Publication HTML format proposed 12
I. Introduction template 12
II. Master Structure template 13
III. Context CCL BIE template 14
Annex IV: Publication Compressed HTML format proposed 15

I. Purpose and scope

1. The business goals of this document are to define the functional requirements, publication formats and publication procedures relevant for the publication of Reference Data Model (RDM) artefacts.

2. The process for the publication of RDM takes into account the following aspects:

- Relationship with the underlying Core Component Library (CCL);
- Validation rules for publication formats;
- Production of the publication bundle;
- Maintenance of RDM.

II. Publication requirements

A. Functionality

3. The capability to meet requirements depends on the chosen publication format (see chapter D). The publication formats support the following functionalities:

- **R01: Publication of the RDMs subset of the CCL**, the publication contains the fields mentioned in the specification of the publication content (Chapter II, section B). The CCL subset has been defined by the relevant RDM.
- **R02: Reference to the underlying CCL Business Information Entity (BIE).** the reference is expressed as the "Unique UN Assigned ID" which is inherited from the information of the BIE of the underlying CCL.
- **R03: Presenting the content of the underlying CCL BIE**, the content of the underlying CCL BIE is presented by linking the RDM BIE to the content of the underlying CCL BIE using hyperlinks or a copy of the underlying CCL BIE along with the RDM BIE.
- **R04: Presenting the RDM in a hierarchical manner**, the business information in a RDM is structured by a Master Structure. The BIEs of the RDM can be Basic Business Information Entities (BBIE), Association Business Information Entities (ASBIE), or Aggregate Business Information Entities (ABIE). The Master Structure of the RDM is presented by using a hierarchy from top to bottom. The hierarchy can be shown by unfolding entities.
- **R05: Advanced searching capabilities**, users of a RDM must be able to find the appropriate BIE as easy as possible. The main search fields are:
    - Short name
    - ID
    - Dictionary entry name (DEN)
    - Definition.
- **R06: Presenting information in a business/technical view**, for business analysts and modelers, information should be presented in a way they can easily understand or recognize. The presentation using short names is best suited for these users, as the presentation using dictionary entry names is more suitable for technical users. Both ways are presented in the RDM.

- **R07: Presenting restrictions made on different levels**, an important aspect of the RDM are restrictions applied to the BIEs of the underlying CCL. One example for restrictions is the choice of a limited number of artefacts (BBIEs or ASBIEs). Restrictions can be applied on different levels: on the highest level, on the BIE of the CCL or on the BIE of the RDM CCL. Therefore, the RDM shall indicate at what level the restrictions are defined.
- **R08: Machine-processable information**, users may want to re-use provided business information in a RDM without re-typing the information. The RDM is therefore provided in a machine-processable format as well.

B. Publication content

4. The RDM shall be published as a "Master structure and subset of the CCL[1]" indicating the version of the underlying CCL. The following information items should be supported by the publication formats for holding the information for each BIE of the RDM when available:

Nr.	*Information item*	*Definition Explanation*	*Mandatory*
1	Status CCL	Indicates for each BIE of the RDM whether or not there is a difference between the published version of the underlying CCL and the previous version ADD = Add CHG = Change DEP = Deprecated	Conditional
2	Status subset CCL	Indicates for each BIE of the RDM whether or not there is a difference between the published version of the RDM subset of the CCL and the previous version of the RDM ADD = Add CHG = Change DEP = Deprecated	Conditional
3	Unique UN Assigned ID	"Unique UN Assigned ID" of the BIE of the underlying CCL.	Yes
4	ABIE/ BBIE/ ASBIE	Indication of the type of the BIE.	Yes
5	Dictionary Entry Name	The unique official name of a Business Information Entity.	Yes
6	Definition	The unique semantic meaning of a Business Information Entity.	Yes
7	Short Name[2]	An alternative simplified name for each	Yes

[1] The subset of the CCL is also known as the "Context Core Component Library (Context CCL)"

[2] The "short name" is a new information item in the CCL. It must not be confused with the "business term"

		Business Information Entity for use by modelers.	
8	Usage Rule(s)	Rules which describe how and/or when to use a Business Information Entity.	No
9	Example(s)	An illustration of the use of a BIE.	No
10	Publication Comments	Additional explanatory information published in the CCL.	No
11	TDED	Identifier to link to a specific data element in the United Nations Trade Data Elements Directory (UNTDED).	No
12	Object Class Term Qualifier(s)	A word or group of words which help define an object class.	No
13	Object Class Term	The name of a logical data grouping to which a data element or association belongs.	Yes
14	Property Term Qualifier(s)	A word or group of words which help define an object class property.	No
15	Property Term	A semantically meaningful name for a characteristic of an object class.	No
16	Datatype Qualifier(s)	Qualifier for the datatype of a Basic Business Information Entity.	No
17	Representation Term	The datatype, such as numeric or text, of a Business Information Entity.	Mandatory for BBIE.
18	Qualified Data Type UID	Unique UN Assigned ID.	No
19	Associated Object Class Term Qualifier(s)	A word or group of words which help define an associated object class.	No
20	Associated Object Class	The name of an object class associated from the Business Information Entity Object Class as a complex characteristic.	No
21	Occurrence Min	Minimum occurrence of the Business Information Entity in the RDM.	Mandatory for BBIE and ASBIE.
22	Occurrence Max	Maximum occurrence of the Business Information Entity characteristic (data element or association) in the RDM.	Mandatory for BBIE and ASBIE.

C. Publication formats

5. The RDM shall be published in the following formats:

- **PDF format** is fully based on an internal Word-format that is not published. A template for the structure of the PDF format is proposed in Annex I.
- **Excel format** is a subset of the columns provided in the full CCL publication, but it has two new columns: "Status of subset CCL" and "Status of the CCL". This first one indicates whether or not there is a difference between the published version of the RDM subset of the CCL and the previous version. The second one is equal to the present CCL column named ADD/CHG/DEP/WDR[3]. A template for the structure of the excel format is proposed in Annex II.
- **HTML format** is proposed in Annex III.
- **Compressed HTML format** is proposed in Annex IV.

6. The high level Business Requirement Specification (BRS) and Requirement Specification Mapping (RSM) are part of the publication of the RDM and have to be updated when any changes made in the RDM impact the high-level business requirements, business artefacts and definitions of the high level BRS and RSM. The high level BRS/RSM are published as PDF documents.

D. Mapping of functionality to the different publication formats

7. The full list of functional requirements cannot be fulfilled by every publication format. The following table maps the functional requirements to the different publication formats.

[3] ADD = Added, CHG = Changed, DEP = Deprecated, WDR = Withdrawn

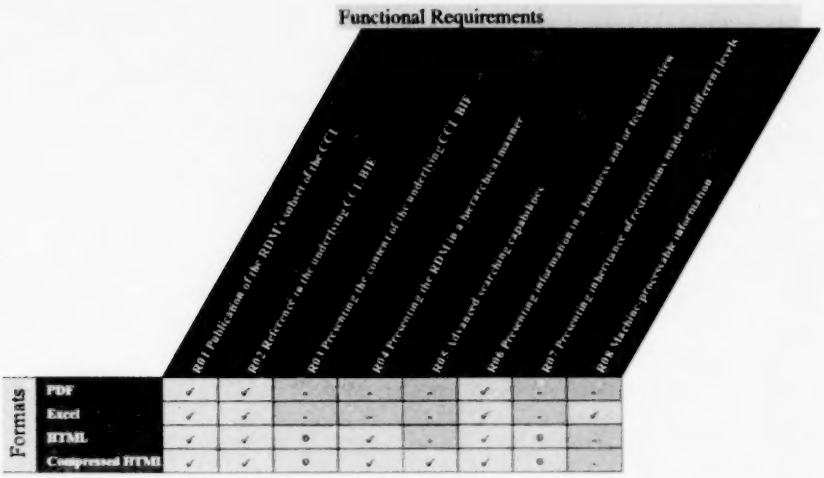

Functional Requirements
R01 Publication of the RDM's subset of the CCL
R02 Reference to the underlying CCL BIE
R03 Preserving the context of the underlying CCL BIE
R04 Preserving the RDM in a hierarchical manner
R05 Advanced searching capabilities
R06 Preserving information in a business and/or technical view
R07 Preserving inheritance of restrictions made on different levels
R08 Machine-processable information
Formats
PDF
Excel
HTML
Compressed HTML

Figure 1 Mapping of functionality to the different publication formats

8. The publication formats are:

Check mark (✓): Desirable and currently possible

Circle (0): Desirable but not yet possible

Dash (-): Not desirable in this format

R03 circle (0): When the CCL is published in the HTML format they could be linked to show underlying CCL.

R05 Check mark (✓): Depending on Compressed HTML viewer tools being used.

R07 Dash (-): When the CCL is published in the HTML format they could be linked to show restrictions made on different levels.

III. Publication procedures of RDMs

9. The publication procedures of RDMs are currently the responsibility of the Library Maintenance Focal Point to produce the publication formats.

IV. Definition of terms

Term Acronyms	*Definition*
ABIE	Aggregate Business Information Entity
ASBIE	Association Business Information Entities
BBIE	Basic Business Information Entities
BIE	Business Information Entity

BRS	Business Requirement Specification
BRS-SCRDM	Business Requirement Specification for the Supply Chain Reference Data Model
CCBDA	Core Components Business Document Assembly
CCL	Core Component Library
CCTS	Core Component Technical Specification
DEN	Directory Entry Name
QDM	Qualified Data Model
RDM	Reference Data Model
RSM	Requirement Specification Mapping
RSM-SCRDM	Requirement Specification Mapping for the Supply Chain Reference Data Model
SCRDM	Supply Chain Reference Data Model
TDED	Trade Data Elements Directory
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNECE	United Nations Economic Commission for Europe
UNTDED	United Nations Trade Data Elements Directory

Annex I:
Publication format PDF

I. Introduction (title page) template proposed

CEFACT – BP/[RDM] – P[no] /CCYY
Draft
CEFACT/DD/MMM/CCYY

UNITED NATIONS
CENTRE FOR TRADE FACILITATION AND ELECTRONIC BUSINESS
(UN/CEFACT)

[PDA ACRONYM] PROGRAMME DEVELOPMENT AREA
[DOMAIN NAME] DOMAIN ([DOMAIN ACRONYM])

[RDM NAME] ([RDM ACRONYM])
MASTER STRUCTURE AND SUBSET OF CCL [VERSION] (CONTEXT CCL)

SOURCE: **[RDM Acronym] Project Team.**
DATE: **DD Month CCYY**
STATUS: **Draft v [version no]**

Disclaimer (Updated UN CEFACT Intellectual Property Rights Policy – ECE TRADE C CEFACT 2010 20 Rev 2)
ECE draws attention to the possibility that the practice or implementation of its outputs (which include but are not limited to Recommendations, norms, standards, guidelines and technical specifications) may involve the use of a claimed intellectual property right.

Each output is based on the contributions of participants in the UN CEFACT process, who have agreed to waive enforcement of their intellectual property rights pursuant to the UN CEFACT IPR Policy document ECE TRADE C CEFACT 2010 20 Rev 2 (available at http://www.unece.org/cefact/cf_docs.html) or from the ECE secretariat. ECE takes no position concerning the evidence, validity or applicability of any claimed intellectual property right or any other right that might be claimed by any third parties related to the implementation of its outputs. ECE makes no representation that it has made any investigation or effort to evaluate any such rights.

Implementers of UN CEFACT outputs are cautioned that any third-party intellectual property rights claims related to their use of a UN CEFACT output will be their responsibility and are urged to ensure that their use of UN CEFACT outputs does not infringe on an intellectual property right of a third party.

ECE does not accept any liability for possible infringement of a claimed intellectual property right or any other right that might be claimed to relate to the implementation of any of its outputs.

II. Master structure[4] and context CCL BIE template proposed[5]

Occurrence	Element/Attribute	Short Name	TDED	qDT
	[4. BIE Type] [5. DEN of ABIE]			
	[5. Dictionary Entry Name of BBIE/ASBIE]	[7.Short Name]	[11. TDED]	[18.qDT ID]
[20/21]	[6. Definition]			
	Unique Assigned UN ID: [3. UN Assigned ID] Status subset CCL : [2. Status subset CCL] Status CCL : [1. Status CCL] Example(s) : [9. Example(s)] Usage rule(s) : [8. Usage Rule(s)] Publication comments : [10. Publication Comments]			
	Page [no] of [no]		Date: DD-MM-CCYY	

[4] For the Master Structure only the root ASBIEs will be specified. The full structure is available in HTML and compressed HTML format.

[5] The numbers are [field numbers] which will not be in the output of this publication format. They correspond with the fields listed in section 4.2 Publication Content. Field numbers 12 to 17 and 19 to 20 are part of the DEN (Dictionary Entry Name) and are not specified as separate fields. Field numbers 1 to 3 and 8 to 10 will only be present if data is available.

Annex II:
Publication Excel format proposed

I. Introduction template sheet

[Version]	[RDM name] ([RDM Acronym])
	Master Structure
	The UN/CEFACT [Version] Master Structure for [RDM Acronym] contains only the BIEs on the highest level of the Reference Data Model. The full hierarchical structure can is presented in the HTML format.
	Context Core Component Library
	The UN/CEFACT [Version] Context Core Component Library (CCL) [RDM Acronym] contains:
	UN/CEFACT Context CCL BIE — All reference BIEs of the Context CCL as harmonised by the Methodology & Technology Library Maintenance Focal Point, presented in an alphabetic order.

II. Master Structure template sheet[6]

1 ACC/C HOICE P CCL DIKA 1	2 ACC/C HOICE P Subse t CCL DIKA 1	3 Based on Unique UN Assigned ID	4 ABIE / BBIE / ASBIE	5 Dictionary Entry Name	6 Definition	Short Name	Usage Rule(s)	Example(s)	Publication comments	TBIE	Object Class Term Qualifier(s)	Object Class Term	Property Term Qualifier(s)	Property Term	Datatype Qualifier(s)	Representation Term	Qualified Data Type (QDT)	Associated Object Class Term Qualifier(s)	Associated Object Class	Occurrence Min	Occurrence Max
			ABIE		Aggregate Business Information Entity.																
			BBIE		Basic Business Information Entity contained within the ABIE																
			ASBIE		Associated Aggregate Business Information Entity associated with the ABIE																

III. Context CCL BIE template sheet[7]

ACC/CH OICE (with P CCL version)	ACC/CHOICE P Subset CCL (version)	Based on Unique UN Assigned ID	ABIE / BBIE / ASBIE	Dictionary Entry Name	Definition	Short Name	Usage Rule(s)	Example(s)	Publication comments	TBIE	Object Class Term Qualifier(s)	Object Class Term	Property Term Qualifier(s)	Property Term	Datatype Qualifier(s)	Representation Term	Qualified Data Type (QDT)	Associated Object Class Term Qualifier(s)	Associated Object Class	Occurrence Min	Occurrence Max
			ABIE		Aggregate Business Information Entity.																
			BBIE		Basic Business Information Entity contained within the ABIE																
			ASBIE		Associated Aggregate Business Information Entity associated with the ABIE																

[6] First row: The numbers in the heading are [field numbers] which will not be in the output of this publication format. They correspond with the fields listed in Chapter II, section B: Publication Content.

[7] See footnote 8.

Annex III:
Publication HTML format proposed

I. Introduction template

[RDM]: Master and subset of CCL [version] (Context CCL)

Start | Structure | Components

[RDM] Master. Details

Issue date: [DD-MM-CCYY]

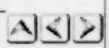
Disclaimer

(Updated UN/CEFACT Intellectual Property Rights Policy – ECE/TRADE/C/CEFACT/ 2010/20/Rev.2)
ECE draws attention to the possibility that the practice or implementation of its outputs (which include but are not limited to Recommendations, norms, standards, guidelines and technical specifications) may involve the use of a claimed intellectual property right.

Each output is based on the contributions of participants in the UN/CEFACT process, who have agreed to waive enforcement of their intellectual property rights pursuant to the UN/CEFACT IPR Policy (document ECE/TRADE/C/CEFACT/2010/20/Rev.2 available at http://www.unece.org/cefact/cf_docs.html or from the ECE secretariat). ECE takes no position concerning the evidence, validity or applicability of any claimed intellectual property right or any other right that might be claimed by any third parties related to the implementation of its outputs. ECE makes no representation that it has made any investigation or effort to evaluate any such rights.

Implementers of UN/CEFACT outputs are cautioned that any third-party intellectual property rights claims related to their use of a UN/CEFACT output will be their responsibility and are urged to ensure that their use of UN/CEFACT outputs does not infringe on an intellectual property right of a third party.

ECE does not accept any liability any possible infringement of a claimed intellectual property right or any other right that might be claimed to relate to the implementation of any of its outputs.



[RDM] Master Print date: DD-MM-CCYY

II. Master Structure template[8]

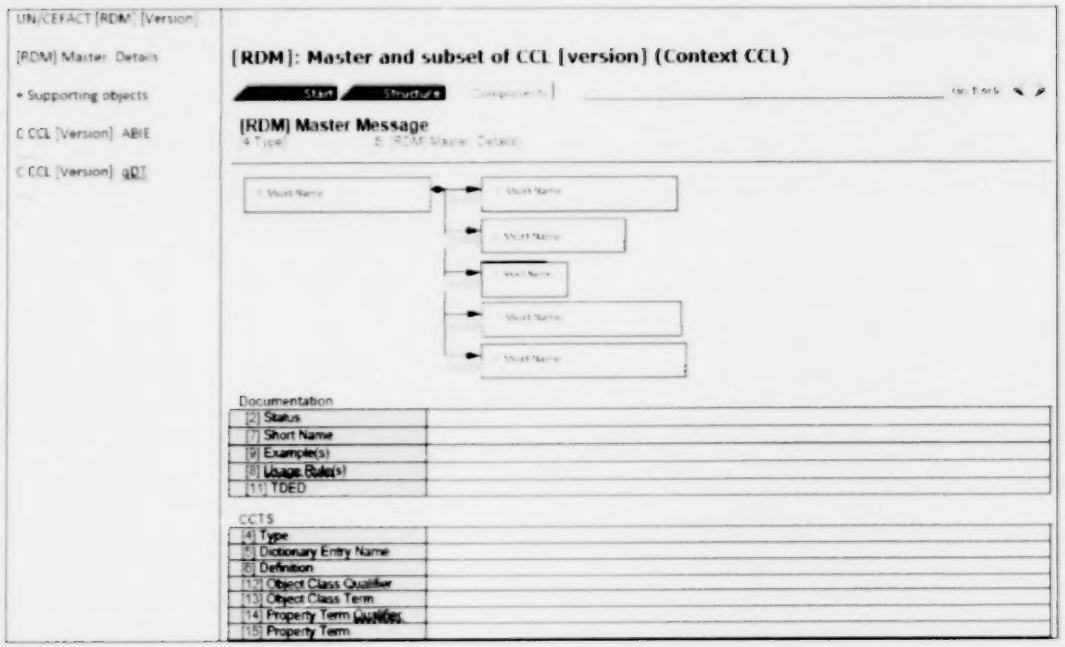
[RDM]: Master and subset of CCL [version] (Context CCL)

Start | Structure | Components

Occurrence	Short name	Dictionary Entry Name
	[RDM] Master	**[RDM] Master. Details**
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	
[1:1] Cardinality	[7. Short Name]	

[8] The numbers are [field numbers] which will not be in the publication format. They correspond with the fields listed in Chapter II, section B 'Publication Content'

III. Context CCL BIE template[a]



[a] The menu option 'Components' is named 'Supporting objects' within the navigation bar (left side). The components are listed in an alphabetic order. The numbers are [field numbers] which will not be in the output of this publication format. They correspond with the fields listed in Chapter II, section B Publication Content.

Annex IV:
Publication Compressed HTML format proposed

- Introduction template : see HTML format previous Annex.
- Master Structure template : see HTML format previous Annex.
- Context CCL BIE template[10]: see HTML format previous Annex.

1. Advanced Search Capabilities depend on the Compressed HTML format file (CHM) reader[11].

2. Possible search options are:
   - "and/or/near/not"
   - "search previous results"
   - "match similar words"
   - "search titles only"

3. Additional features may be: storing pages as favourites.

---

[10] The menu option 'Components' is named 'Supporting objects' within the navigation bar (left side).
[11] For example: Microsoft HTML Help reader